

PATENT ABSTRACTS OF JAPAN

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(21) Application number : 62-314363	(71) Applicant : TOSHIBA CORP
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(54) FIBER REINFORCED SUPERCONDUCTOR

(57) Abstract:

PURPOSE: To obtain the title dense superconductor having high mechanical strength and high critical current density by dispersing fine inorganic fibers in an oxide superconductor.

CONSTITUTION: After precalcining a powder mixture of elements such as Y, Ba, Cu, etc., constituting an oxide superconductor and pulverizing the precalcined product, the pulverized product is molded to a desired shape, and calcined at 850W980°C in O₂-contg. atmosphere. Then, the calcined product is heat-treated while cooling the calcined product at $\leq 600^{\circ}\text{C}$ to obtain thus an oxygen deficient perovskite type oxide superconductor expressed by the formula (wherein Ln is at least one kind of element selected from rare earth elements; δ is a number of deficient oxygen atom), which is then pulverized and an oxide superconductor is obtd. 99W80vol.% said powder and 1W20vol.% at least one kind of inorganic fine fiber selected

$\text{LnBa}_2 \text{Cu}_3 \text{O}_{7-\delta}$

from fine alumina fiber, fine SiC fiber, fine Si₃N₄ fiber, and fine potassium titanate fiber, are mixed. After molding preliminarily the mixture to a desired shape, the product is subjected to impact molding and sintered at 850W950°C in O₂-contg. atmosphere, then heat-treated at 300W600°C in O₂- contg. atmosphere to introduce thus oxygen thereinto.

LEGAL STATUS

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